

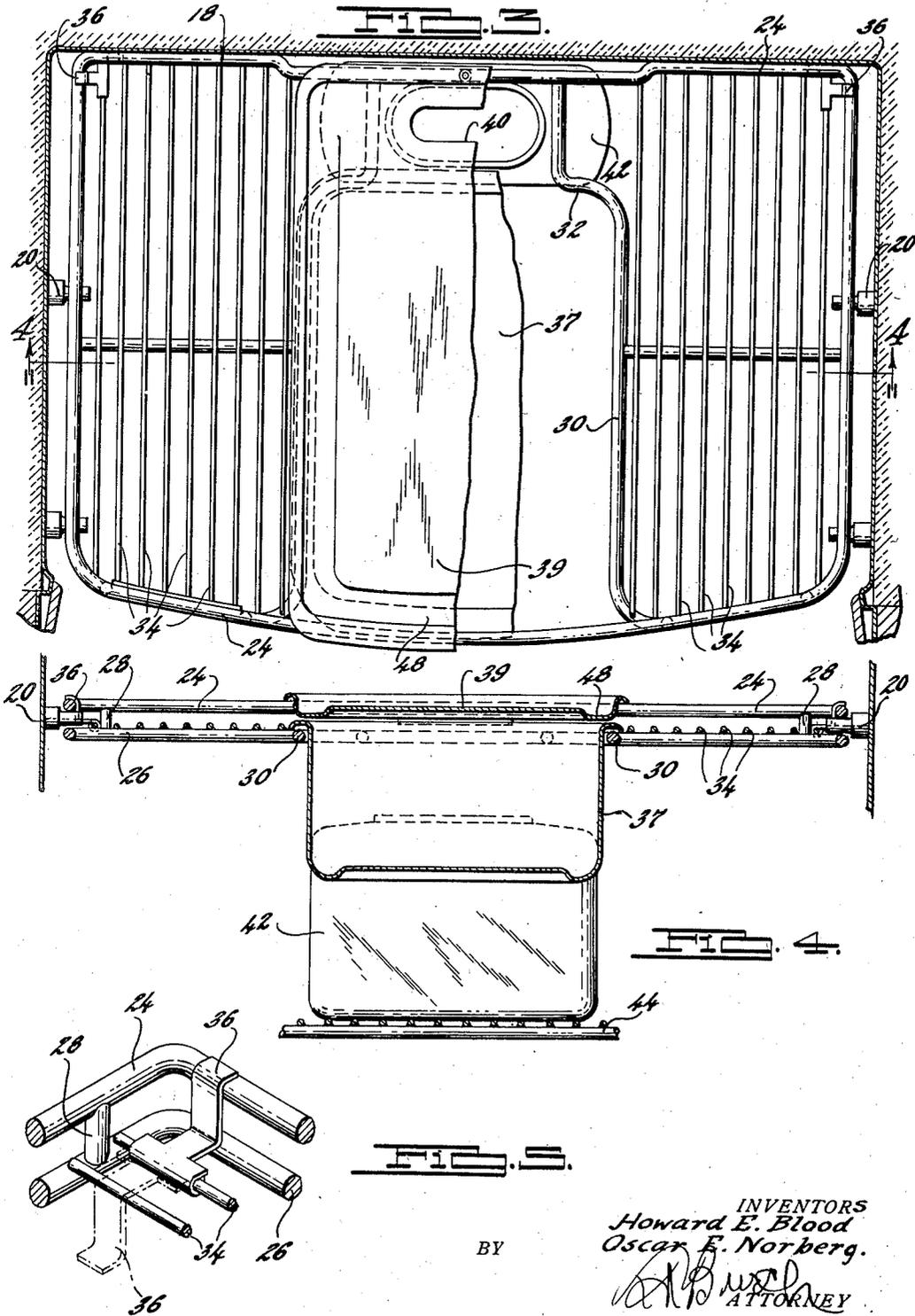
Dec. 3, 1940.

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REFRIGERATING APPARATUS

2,223,947

Filed March 2, 1939

2 Sheets-Sheet 2



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REFRIGERATING APPARATUS

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Application March 2, 1939, Serial No. 259,414

4 Claims. (Cl. 62—103)

This invention relates to the art of refrigeration and has particular reference to a new and improved form and arrangement of parts, such as, shelves, receptacles and bottles within a provision compartment and relative to a heat absorbing element therein.

More specifically the invention contemplates a new and more useful form of shelf, drip collector and storage receptacle and the arrangement thereof relative to the evaporator and within a provision compartment of the type provided within domestic refrigerators.

A principal object of this invention is to provide a new and improved interior arrangement for the provision compartment of a household refrigerator.

Another object of the invention is to provide a new and improved method of and apparatus for collecting and storing the drip from an evaporator and within the provision compartment of a refrigerator.

Another object of the invention is to provide a new and improved form of cold storage compartment within a larger refrigerated compartment and immediately below the evaporator therein.

Another object of the invention is to provide new and improved forms of receptacles for more efficiently utilizing the space within the provision compartment of a refrigerator.

Another object of the invention is to provide a new and improved means for effecting the loosening of ice cubes from the grid and the tray.

Other objects and advantages of the invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawings of which there are two (2) sheets and wherein:

Fig. 1 is a front elevational view of a provision compartment of a refrigerator embodying this invention;

Fig. 2 is a vertical section taken generally in the plane along the line 2—2 of Fig. 1;

Fig. 3 is a horizontal section taken on the plane of the line 3—3 of Fig. 1, certain of the parts being broken away to clarify the details;

Fig. 4 is a vertical sectional view taken along the line 4—4 of Fig. 3;

Fig. 5 is a detail of the stop for limiting the forward movement of the shelf;

Fig. 6 is a view illustrating the means by which loosening of ice cubes from the grid and tray may be effected; and

Fig. 7 is a view taken along the line 7—7 of Fig. 6.

Referring now to Figs. 1 and 2, there is illus-

trated a part of a heat insulated cabinet 10 providing a provision compartment 12, the opening to which is normally closed by a door 14. The provision compartment may, as illustrated, be of rectangular form and has arranged therein an evaporator 16 of a refrigerating system, said evaporator being suspended from the top wall of the provision compartment and spaced from the side walls thereof. Immediately below the evaporator there is arranged a shelf 18 of approximately the same shape as the horizontal cross section of the provision compartment. Said shelf may be fixedly supported by the cabinet or from the evaporator thereof, but in the illustrated embodiment of the invention, it preferably is arranged so as to be slidably supported by a set of pins or shelf supports 20 suitably carried by the side walls of the provision compartment. The shelf 18 consists of an upper frame 24, which defines the outline of the shelf, and lower frame 26, suitably secured to the upper frame by a series of posts 28. The lower frame 26, at the sides and back, has generally the same configuration as the upper frame 24. In the front, the lower frame 26 extends inwardly from each side thereof toward the center, but before reaching the center, turns and extends toward the back so as to provide a guide or track which consists of spaced substantially parallel portions or rails 30, the rear ends of which may be fastened to that portion of the lower frame 26 which extends across the back of the shelf. Each of the rails or portions 30 may be formed at 32 so as to provide a stop. The area lying between each of the rails 30 and the adjacent side of the lower frame 26 is covered by a series of relatively small spaced bars 34 which define shelf surface, but which offers substantially no restriction to the circulation of air within the provision compartment 12. The upper frame 24, it will be observed, provides a guard rail for the surface of the shelf 18. It will further be observed that the shelf 18 includes two spaced supporting surfaces one of which is arranged upon each side of the evaporator 16, the space between the rails 30 being approximately the same as the width of the evaporator 16. The side portions of the upper frame 24 are adapted to slide upon the shelf supports 20. The shelf 18 is an integral rigid unit and is adapted to slide as such upon the supports 20 from the position in which it is illustrated in Fig. 3 forwardly to a position where the shelf stops 36 will engage the rear pair of the upper set of shelf supports 20. The stop 36 consists of an arm pivoted to one of the bars 34 and the path of which, upon movement of the

shelf 18 forwardly, is obstructed by the rear pair of upper shelf supports 20. By flipping the stops 36 from the position shown in full lines in Fig. 5, to the position shown in dotted lines in Fig. 5, the shelf 18 may be withdrawn completely from the provision compartment by pulling such shelf forwardly.

The rails 30 provide a slidable support or guide for a pan 37 beneath the evaporator 16, the upper edges of said pan being flanged outwardly so as to overlie the rails 30 and thereby support the pan 37 therefrom. The width of the pan, it will be observed, is just slightly less than the space between the rails 30, while the length of the pan 37 is such as to extend from the stop 32 to approximately the forward end of the shelf 18. The cover of the pan 37 is provided by a shallow tray 39, said cover or tray being of a width sufficient to cover the pan 37, but being greater in length than the pan 37 so as to extend between and be supported by the front and rear portions of the upper frame member 24 and in slightly spaced relation to the upper edges of the pan 37 so as to permit a more or less restricted air circulation between the space in the pan 37 and the space externally thereof. The tray or cover 39 is of sufficient extent to underlie the evaporator 16 so as to receive and collect the drip therefrom, said tray being provided with an aperture 40 by means of which the liquid drip from the evaporator may escape into the receptacle 42, the mouth of which is immediately below the aperture 40, said receptacle being illustrated as being supported by a lower shelf 44, immediately adjacent the rear wall 46 of the cabinet and within the space between the rear edge of the pan 37 and the back wall of the provision compartment. The receptacle 42 may be of a capacity sufficient to store the liquid drip from one or more defrostings of the evaporator 16. The receptacle 42 may be removed periodically, say, once a week, by shifting the same laterally upon its supporting surface and then removing the same through the open door of the provision compartment. It will be observed that the receptacle 42, which may be of glass, occupies a relatively inaccessible portion of the provision compartment and hence one which is less generally useful for the storage of foods. The upper surface of the tray or cover may be provided with a channel 48, and a part of the upper surface of said cover 39 may be sloped so as to direct liquid received thereby toward the aperture 40.

The pan 37 is slidably supported by the side rails 30 so as to permit forward movement thereof independently of the shelf 18 and of the cover 39, while forward movement of the shelf 18 will also carry along with it the cover 39 as well as the pan 37. Due to its location immediately below the evaporator, the space within the pan 37 is particularly useful for the storage of meats, although its use is not limited thereto.

The space between the upper and lower frame members 24 and 26 and at one side of the shelf 18 may be formed to provide a slot 50 the vertical dimension of which is just slightly greater than the thickness of a flange 52 provided on one end of an ice tray 54, said tray being normally arranged within the evaporator for freezing liquid contained in such tray and being provided with a grid 56 which serves to divide the liquid in the tray, when frozen, into suitable cubes. After the freezing of the liquid in the tray 54 and within the evaporator 16, the tray 54 may be removed from the evaporator and arranged so that

the rear edge 52 is located within the slot 50, and, thence, by holding the front end of the tray and applying an upward force on one side thereof, at the front, and a downward force on the other side thereof, at the front, the tray 54 may be distorted or flexed so as to effect a separation of the ice cubes and the grid from the tray. Preferably, the surface of the tray, which may be of metal such as anodized aluminum, may be waxed so as to expedite the separation of the ice cubes therefrom. After twisting the tray, the same may be removed from engagement with the slot 50 and the grid 54, with the cubes therein, may be removed from the tray. If the grid 54 is constructed of flexible material, such as stainless steel, rubber or some other flexible material, the ready separation of the ice cubes therefrom will be effected.

While the invention has been described with some detail, it is to be understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

We claim:

1. In a refrigerator, a shelf including a frame having spaced upper and lower frame members, the lower of said frame members being formed to provide a guide, a pan the sides of which are formed for cooperation with said guide so as to slidably support said pan, and a combination drip-collecting pan and cover for said first pan, said cover being supported by said upper frame member so as to permit movement of said pan independently of said cover, said cover being longer than said pan and overlapping the rear end thereof and a generally flat bottle adapted to occupy the space between the rear of said pan and the rear wall of said refrigerator for receiving the drippings from said cover.

2. In a device of the class described, a shelf including a frame having spaced upper and lower frame members, the lower of said frame members being formed to provide a guide, a pan the sides of which are formed for cooperation with said guide so as to slidably support said pan, a cover for said pan, said cover being supported by said upper frame member so as to permit movement of said pan independently of said cover, cooling means arranged above said cover, and a liquid receptacle arranged below said shelf, said cover comprising a part of means for directing drippings from said cooling means into said receptacle.

3. In combination with a heat insulated compartment, an evaporator, a shallow drip collecting tray removably supported below said evaporator, a readily removable receptacle arranged at the rear of said heat insulated compartment for receiving drip from said tray, and a food receiving pan open at the top, means supporting said tray and pan in predetermined vertically spaced relation, said pan being positioned in line with and in front of said receptacle, said tray forming cover means for said pan and extending rearwardly therebeyond to a point over said receptacle to provide for directing said drip into said receptacle.

4. In an assembly of the class described including means defining a removable shelf, an evaporator in spaced relation above the level of said shelf, a hydrator having an open upper portion defined in part by outwardly extending side

flanges, said shelf being formed with guide means supporting said flanges, said hydrator being below and having substantially the same width as said evaporator but being a predetermined amount shorter than said evaporator to provide a space behind said hydrator, a receptacle in said space, a cover for said hydrator, said cover being in the form of a shallow tray longer than said hydrator and extending over said receptacle space, said cover serving to collect drippings from

said evaporator and to direct the same into said receptacle, said shelf defining means comprising means for supporting said cover in predetermined spaced relationship with respect to said evaporator thereabove and with respect to said hydrator therebelow, the spacing from said hydrator having the purpose of providing the necessary circulation of air.

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